

Amendments to and Listing of the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-12. (Cancelled).

13. (Previously Presented). An injection apparatus comprising:
a first chamber containing a medicine;
a plunger cooperating with said first chamber, said plunger having a first engaging member defined thereon;
a needle in fluid communication with said first chamber;
a coupling having a second engaging member defined in an inner periphery, said first and second engaging members being releasably engaged to one another; and
a first spring acting on said coupling to urge said plunger in a first direction until said coupling contacts a surface, wherein said surface causes said second engaging member to move away from said plunger so that said first and second engaging members are released from one another.

14. (Previously Presented). The injection apparatus as in claim 13, wherein said first chamber and said needle are movably disposed in a housing.

15. (Previously Presented). The injection apparatus as in claim 14, further comprising a second spring for urging said first chamber and said needle in a second direction, said second spring being weaker than said first spring.

16. (Previously Presented). The injection apparatus as in claim 15, wherein said second spring moves said first chamber and said needle in said second direction once said first and second engaging members are released from one another.

17. (Previously Presented). The injection apparatus as in claim 14, further comprising a damper pad disposed between said housing and said first chamber so that an impact of said first chamber with said housing is dampened.

18. (Previously Presented). An injection apparatus comprising:

a syringe assembly having a needle, a first chamber for holding a medicine, and a plunger operable to force said medicine from said first chamber through said needle;

a first engaging member being defined on said plunger;

a housing being disposed about said syringe assembly so that said syringe assembly is movable in said housing between a retracted position and an extended position, said housing concealing said needle in said retracted position, and said needle extending from said housing in said extended position;

a first spring for driving said syringe assembly from said retracted position to said extended position and for causing said plunger to drive said medicine through said needle;

a coupling being disposed between said first spring and said plunger, said coupling having a second engaging member, said coupling having a closed position and an open position, said first and second engaging members being engaged to one another when said coupling is in said closed position so that said plunger is driveably engaged with said first spring, and said first and second engaging members being disengaged from one another when said coupling is in said open position so that said plunger is disengaged from said first spring; and

a surface being defined in said housing for moving said coupling from said closed position to said open position after said plunger forces said medicine from said first chamber through said needle.

19. (Previously Presented). The injection apparatus as in claim 18, wherein said surface slopes radially away from said plunger.

20. (Previously Presented). The injection apparatus as in claim 18, wherein said first engaging member is a groove defined on said plunger and said second engaging member is a lip defined on said coupling.

21. (Previously Presented). The injection apparatus as in claim 20, wherein said groove is circumferentially defined on said plunger and said lip is circumferentially defined on an inner face of said coupling.

22. (Previously Presented). The injection apparatus as in claim 18, wherein said coupling further comprises a plurality of openable portions having said second engaging member thereon.

23. (Previously Presented). The injection apparatus as in claim 22, wherein said first spring drives said plurality of openable portions over said surface to open said portions until said first and second engaging members disengage.

24. (Previously Presented). The injection apparatus as in claim 18, further comprising a second spring for driving said syringe assembly from said extended position to said retracted position after said coupling is moved to open position.

25. (Previously Presented). The injection apparatus as in claim 18, further comprising a damper pad disposed between said housing and said syringe assembly so that an impact of said syringe assembly with said housing when said syringe assembly reaches said extended position is dampened.

26. (Previously Presented). The injection apparatus as in claim 18, further comprising means for releasably securing said syringe assembly in said retracted position.

27. (Previously Presented). An injection apparatus comprising:
a housing;

a syringe assembly having a needle, a first chamber for holding a medicine, and a plunger operable to force said medicine from said first chamber through said needle, said syringe assembly being movably disposed in said housing so that said housing conceals said needle in a first position and said needle extends from said housing in a second position;

a first spring for driving said syringe assembly from said first position to said second position and for causing said plunger to drive said medicine through said needle;

a coupling being disposed between said first spring and said plunger, a first portion of said plunger being engaged with a second portion of said coupling when said coupling is in a closed position so that said plunger is driveably engaged with said first spring, said first and second portions being disengaged from one another when said coupling is in an open position so that said plunger is disengaged from said first spring; and

a surface being defined in said housing for moving said coupling from said closed position to said open position after said plunger forces said medicine from said first chamber.

28. (Previously Presented). The injection apparatus as in claim 27, wherein said surface slopes radially away from said plunger.

29. (Previously Presented). The injection apparatus as in claim 28, wherein said first portion is a groove defined on said plunger and said second portion is a lip defined on said coupling.

30. (Previously Presented). The injection apparatus as in claim 27, further comprising a second spring for returning said syringe assembly to said first position after said coupling is moved to open position.

31. (Previously Presented). The injection apparatus as in claim 27, further comprising a

damper pad disposed between said housing and said syringe assembly so that an impact of said syringe assembly with said housing when said syringe assembly reaches said second position is dampened.

32. (Previously Presented). The injection apparatus as in claim 27, further comprising means for releasably securing said syringe assembly in said first position.

33. (New). An automatic injecting apparatus comprising:

a housing having a cavity and a proximal and a distal end;

a syringe assembly within the housing, the syringe assembly further comprising:

a first chamber for holding a liquid;

a needle; and

a plunger, the plunger having a plunger shaft disposed proximally, the plunger being operable to force the liquid from the first chamber;

the plunger shaft engaging a spring-to-plunger coupling;

a driver spring within the housing, engaging the spring-to-plunger coupling, operable to the syringe assembly to inject the needle and displace the liquid medicine through the needle; and

a splitter attached to the housing distally to the spring-to-plunger coupling; the splitter having a surface for engaging the spring-to-plunger coupling and forcing the spring-to-plunger coupling to disengage from the plunger shaft, thereby disengaging the driver spring from the syringe assembly.

34. (New). The automatic injecting apparatus of claim 33, where the plunger shaft further comprises a circumferential groove; and, the spring-to-plunger coupling further comprises:

a plurality of axial slits; and,

a radial lip for releasably engaging the circumferential groove, so that the radial lip disengages from the circumferential groove as the spring-to-plunger coupling engages the splitter.

35. (New). The automatic injecting apparatus of claim 33, further comprising:
a second chamber for holding a liquid;
a disk disposed between the first chamber and the second chamber; the disk releasably sealing the first chamber from the second chamber; and,
a least one aperture in the wall of the second chamber allowing liquid communication between the portion of the second chamber proximal to the disengaged disk and the portion of the second chamber distal to the disengaged disk, so that the liquid flows through the second chamber before being forced through the needle.

36. (New). The automatic injecting apparatus of claim 33, further comprising a return spring; the return spring disposed between the housing and the syringe assembly; the return spring urging the syringe assembly proximally when the driver spring is disengaged from the syringe assembly.

37. (New). The automatic mixing and injecting apparatus of claim 33, further comprising:
at least two compressible barbs; the barbs connected to the proximal end of the plunger shaft;
the housing having a housing cap;
a rod disposed within the housing cap; the rod having an interior bore sized to receive the barbs in their compressed state; and,
a detent integral with the housing cap; the detent sized to engage the barbs in their uncompressed state and prevent the distal movement of the plunger shaft until the barbs are compressed.

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38. (New). The automatic mixing and injecting apparatus of claim 33 further comprising a flexible septum; the flexible septum disposed proximally to the proximal end of the needle and sealing the needle from the second chamber; so that liquid pressure in the chamber causes the septum to deflect distally until the septum is penetrated by the proximal end of the needle.